

I CLAIM:

- 1 1. An apparatus for embossing a design on a raw clay sidewall
2 of a pottery bowl, said apparatus comprising:
3 a press block;
4 a die block having a recessed die cavity in a shape of
5 the design, a first one of the press and die blocks for
6 positioning adjacent an inner surface of the raw clay
7 sidewall, and a second one of the press and die blocks for
8 positioning adjacent an outer surface of the raw clay
9 sidewall opposite the first one of the press and die blocks
10 with the recessed die cavity of the die block facing in a
11 direction of the press block; and
12 means for retractably urging the press and die blocks
13 relatively toward each other so as to press the press block
14 against the raw clay sidewall and plastically displace a
15 portion of the raw clay sidewall into the recessed die
16 cavity of the die block to thereby produce an embossed
17 portion of the raw clay sidewall which is molded in a shape
18 of the design.
- 1 2. The apparatus as in Claim 1,
2 wherein the press block has an active press surface
3 shaped to substantially mate with the recessed die cavity of

4 the die block for contactedly producing the embossed portion
5 of the raw clay sidewall when pressed thereagainst.

1 3. The apparatus as in Claim 2,

2 wherein the press block has a passive press surface
3 which is peripheral to the active press surface and which is
4 contoured to a corresponding one of the inner and outer
5 surfaces of the raw clay sidewall for providing support
6 thereto during formation of the embossed portion of the raw
7 clay sidewall.

1 4. The apparatus as in Claim 1,

2 wherein the press block has an active press surface for
3 contactedly producing the embossed portion of the raw clay
4 sidewall when pressed thereagainst, and a passive press
5 surface which is peripheral to the active press surface and
6 which is contoured to a corresponding one of the inner and
7 outer surfaces of the raw clay sidewall for providing
8 support thereto during formation of the embossed portion of
9 the raw clay sidewall.

5. The apparatus as in Claim 4,

wherein the active press surface is shaped to substantially mate with the recessed die cavity of the die block.

6. The apparatus as in Claim 1,

wherein the die block has a die block support surface which is peripheral to the recessed die cavity and which is contoured to a corresponding one of the inner and outer surfaces of the raw clay sidewall for providing support thereto during formation of the embossed portion of the raw clay sidewall.

7. The apparatus as in Claim 1,

wherein the means for retractably urging the press and die blocks relatively toward each other comprises:

a pair of actuator arms operably connected to each other at a hinge joint, with each actuator arm extending from the hinge joint to an output end which is connected to a corresponding one of the press and die blocks; and

means for pivoting the pair of actuator arms about the hinge joint and relatively toward each other.

1 8. The apparatus as in Claim 7,

2 wherein the means for pivoting the pair of actuator
3 arms comprises:

4 pneumatic means having a generally piston-cylinder
5 configuration which encloses a pressure chamber and
6 which operably connects to the pair of actuator arms at
7 input portions thereof with the input portions spaced
8 from the hinge joint and the output ends, for exerting
9 an equal and opposite input force on the input portions
10 due to displacement of the piston to an equilibrium
11 position when compressed air is introduced into the
12 pressure chamber;

13 a compressed air source; and

14 means for delivering compressed air from the
15 compressed air source to the pressure chamber.

1 9. The apparatus as in Claim 8,

2 wherein the pressure chamber comprises first and second
3 sub-chambers which are divided by a piston head of the
4 piston, and the means for delivering compressed air includes
5 a first air line to the first sub-chamber and a second air
6 line to the second sub-chamber, and

7 further comprising valve means for adjustably varying
8 the pressure of the compressed air delivered to each of the

first and second sub-chambers so as to produce a pressure differential on opposite sides of the piston head for controlling the degree of piston displacement and resulting input force.

10. A method for embossing a design on a raw clay sidewall of a pottery bowl, said method comprising the steps of:

providing a press block and a die block, with the die block having a recessed die cavity in a shape of the design;

positioning a first one of the press and die blocks alongside an inner surface of the raw clay sidewall;

positioning a second one of the press and die blocks alongside an outer surface of the raw clay sidewall opposite the first one of the press and die blocks, with the recessed die cavity of the die block facing in a direction of the press block;

urging the press and die blocks relatively toward each other so as to press the press block against the raw clay sidewall and plastically displace a portion of the raw clay sidewall into the recessed die cavity of the die block to thereby produce an embossed portion of the raw clay sidewall which is molded in the shape of the design; and

retracting the press and die blocks from the raw clay sidewall.

1 11. The method as in Claim 10,

2 further comprising the step of providing a pair of
3 actuator arms operably connected to each other at a hinge
4 joint, with each actuator arm extending from the hinge joint
5 to an output end which is connected to a corresponding one
6 of the press and die blocks, and

7 wherein the step of urging the press and die blocks
8 relatively toward each other includes pivoting the pair of
9 actuator arms about the hinge joint and relatively toward
10 each other.

1 12. The method as in Claim 11,

2 wherein the step of pivoting the pair of actuator arms
3 includes exerting an equal and opposite input force on the
4 pair of actuator arms at input portions thereof which are
5 spaced from the hinge joint and the output ends.

1 13. The method as in Claim 12,

2 wherein the input force is pneumatically exerted by
3 delivering compressed air to a pressure chamber of a piston-
4 cylinder configuration operably connected to the input
5 portions to thereby displace the piston to an equilibrium
6 position.

1 14. In a pottery bowl having a sidewall with opposing first and
2 second sidewall surfaces, the improvement comprising:

3 a plastically-displaced embossed portion of the
4 sidewall having a raised surface region in bas-relief from
5 the first sidewall surface, and an indented surface region
6 opposite the raised surface region which is recessed from
7 the second sidewall surface, at least one of the raised and
8 indented surface regions having a shape of a pre-determined
9 design impressed thereon when the raised and indented
10 surface regions were simultaneously formed by plastic
11 displacement caused by a displacement force exerted against
12 the second sidewall surface toward the first sidewall
13 surface while previously in a pliable raw condition.

15. The improved pottery bowl as in Claim 14,

wherein each of the raised and indented surface regions
have the shape of the pre-determined design impressed
thereon and substantially contoured to each other.